Application / Web Development Best Practices:

Best Practice 1. Adopt a total cost of ownership model for applications and technologies that balances the costs of development, support, training, disaster recovery and retirement against the costs of flexibility, scalability, ease of use, and reduction of integration complexity.

Best Practice 2. Implement business rules as discrete components ensuring the correct enactment of policies governing the accuracy of related data and the execution of the actions to be performed. Discrete components support the ease of change to business rules and policies and verification that the information or process complies with the applicable rules.

Best Practice 3. Access data through business rules.

Best Practice 4. Make business rule components platform-neutral supporting SOA architecture.

Best Practice 5. Assign responsibility for defining and maintaining the integrity of business rules to business units.

Best Practice 6. Adopt coding standards for all languages on all platforms.

Best Practice 7. Design applications for future usage and added functionality. Most applications evolve to support new business requirements. Extensibility provides functional scalability.

Best Practice 8. Use integrated tool sets to support the use of the State's SDM.

Best Practice 9. Document object models, interaction diagrams, design artifacts, and record the structure, behavior and interfaces of application solutions. Document business processes, business rules, source code and user interface.

Best Practice 10. Design applications that are platform independent.

Best Practice 11. Design the code providing input and output to the user interface to support as wide a range of interfaces as needed, including other applications and other types of user interfaces such as internal user, mobile user, Internet, and Extranet.

Best Practice 12. Once the detailed application design is complete, concentrate on achieving a working system utilizing reusable components whenever possible, allowing the system to be tested first and optimized later.

Best Practice 13. Design applications so they can be managed using the enterprise's system management practices and tools.

Best Practice 14. Design for ease of testing; design application components so they can be tested and debugged easily.

Best Practice 15. Design web-facing applications to support the current minimum "code to" standards for web browsers. Recommended baseline "code to" standards optionally include Microsoft IE 6.0 and above, Mozilla Firefox 3.x and above, Google Chrome 4.x and above, Apple Safari 3.x and above, and Opera 10.x and above.

Best Practice 16. Implement Commercial Off-The-Shelf (COTS) solutions with little or no customizations and well defined governance procedures. Business needs requiring specific customizations should lean towards Modifiable Off-The-Shelf (MOTS) solutions or Government Off-The-Shelf (GOTS) solutions.

Best Practice 17. Establish and maintain shared reuse libraries.

Best Practice 18. Develop solutions using industry standard coding practices including conventions, styles, standards, and security guidelines.

Best Practice 19. "DoIT Payment Service" must be used by State agencies when developing websites and/or applications that need to process Credit Card transactions. This payment service uses PayPal Payflow Pro API to communicate with PayPal, the secure commercial Credit Card processing tool.

Best Practice 20. The use of Adobe Flash is limited to only creating animated introductions and features on existing websites and for video. Flash cannot be used to develop interactive websites or applications. Special consideration should be given to ensure accessibility of any Flash content.

Best Practice 21. Within this domain, Web Browser standards are set for development, testing, and production. These are the minimum web browser requirements that websites and web applications being created for state business should function within.

Best Practice 22. It is the policy of the State of Connecticut to ensure that people with hearing, visual and other disabilities have equal access to public information that is available on the Internet and the Web to ensure access.

   a. Federal Rehabilitation Act Section 508 standards must be incorporated on state funded websites;

   b. It is the direct responsibility of the agency and its web page developers to become familiar with the guidelines for achieving universal accessibility and to apply these principles in designing and creating any official State of Connecticut Website;

   c. Testing tools should be used to validate a site's adherence to Section 508. Recommended tools are available at http://www.access.state.ct.us/tools.html.

Best Practice 23. CT.gov "branding standards for new websites or applications is available.

   a. Agencies should review the CT.gov Website Guidelines for more details on home page content standards.

Best Practice 24. Data validation must be written into all online forms

Best Practice 25. A security assessment should be performed on all new websites and applications that collect information or were developed in a programming language. (Refer to Security Domain Document)

Best Practice 26. All websites and applications should have a valid privacy policy that meets the requirements of the application or website where it resides. CT.gov policy can be used or modified as needed to ensure policy compliance.

Best Practice 27. All applicable policies should be reviewed prior to creating any new websites and applications (including social networking websites) (Refer to the State of Connecticut Policies Relevant to this Domain)

Best Practice 28. Content on websites and applications should reviewed, at a minimum, on an annual basis. Outdated content should be removed or modified.

Best Practice 29. Content no longer needed should be deleted from web servers. Web servers should not be used for archive purposes. All content that needs to be saved and stored for record retention should be housed locally at the agency.

Best Practice 30. Websites that are no longer being used must be taken offline and the domain name should be redirected to an active website.

State of Connecticut IT Policies Relevant to this Domain

Policy for the Management of State Information Technology Projects

Domain Name Registration and Usage

Implementation and Deployment of State Agency Internet Sites and Extranet Sites

Acceptable Use Policy of State Systems (Internet and E-Mail)

Accessibility Policy for Connecticut State Government Websites

Management of State Information Technology Projects

Network Security and Procedures